WHAT IS CLAIMED IS:

1. A method of screening for drug candidates useful in treating a cancer resulting from a mutation in *MMSC1*, wherein said method involves mixing a mutant MMSC1 with a wild-type protein, to which wild-type MMSC1 binds, in both the presence of a drug and the absence of said drug and measuring the amount of binding of said mutant MMSC1 with said wild-type protein, wherein if the amount of said binding is greater in the presence of said drug than in the absence of said drug then said drug is a drug candidate for treating said cancer.

2. The method of claim 1, wherein said mutant MMSC1 is a fusion protein and/or said wild-type protein is a fusion protein.

3. The method of claim 1, wherein said wild-type protein is MMAC1.

4. The method of claim 1, wherein said method utilizes a yeast-two hybrid system.

5. The method of claim 1, wherein said test compound is provided in a combinatorial library.

6. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 1.

7. A method for screening for drug candidates useful in treating a cancer resulting from a mutation in a protein, which protein when wild-type binds with wild-type MMSC1, wherein said method involves mixing said protein containing said mutation with wild-type MMSC1 in both the presence of a drug and the absence of said drug and measuring the amount of binding of said protein containing said mutation with said wild-type MMSC1, wherein if the amount of said binding is greater in the presence of said drug than in the absence of said drug then said drug is a drug candidate for treating said cancer.

8. The method of claim 7, wherein said wild-type MMSC1 is a fusion protein and/or said mutant protein is a fusion protein.

9. The method of claim 7, wherein said protein is MMAC1.

10. The method of claim 7, wherein said method utilizes a yeast-two hybrid system.

11. The method of claim 7, wherein said test compound is provided in a combinatorial library.

12. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 7.

13. A method of screening for drug candidates useful in treating a cancer resulting from a mutation in *MMSC1*, wherein said method involves mixing a mutant MMSC1 with a wild-type protein, to which wild-type MMSC1 binds, in both the presence of a drug and the absence of said drug and measuring the amount of binding of said mutant MMSC1 with said wild-type protein, wherein if the amount of said binding is less in the presence of said drug than in the absence of said drug then said drug is a drug candidate for treating said cancer.

14. The method of claim 13, wherein said wild-type MMSC1 is a fusion protein and/or said wild-type protein is a fusion protein.

15. The method of claim 13, wherein said wild-type protein is MMAC1.

16. The method of claim 13, wherein said method utilizes a yeast-two hybrid system.

17. The method of claim 13, wherein said test compound is provided in a combinatorial library.

18. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 13.

19. A method for screening for drug candidates useful in treating a cancer resulting from a mutation in a protein, which protein when wild-type binds with wild-type MMSC1, wherein said method involves mixing said protein containing said mutation with wild-type MMSC1 in both the presence of a drug and the absence of said drug and measuring the amount of binding of said protein containing said mutation with said wild-type MMSC1, wherein if the amount of said binding is less in the presence of said drug than in the absence of said drug then said drug is a drug candidate for treating said cancer.

20. The method of claim 19, wherein said wild-type MMSC1 is a fusion protein and/or said mutant protein is a fusion protein.

21. The method of claim 19, wherein said protein is MMAC1.

22. The method of claim 19, wherein said method utilizes a yeast-two hybrid system.

23. The method of claim 19, wherein said test compound is provided in a combinatorial library.

24. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 19.

25. A method of screening for drug candidates useful in treating a cancer resulting from a mutation in *MMSC1*, wherein said method involves mixing a wild-type MMSC1 with

a wild-type protein, to which wild-type MMSC1 binds, in both the presence of a drug and the absence of said drug and measuring the amount of binding of said mutant MMSC1 with said wild-type protein, wherein if the amount of said binding is less in the presence of said drug than in the absence of said drug then said drug is a drug candidate for treating said cancer.

26. The method of claim 25, wherein said wild-type MMSC1 is a fusion protein and/or said wild-type protein is a fusion protein.

27. The method of claim 25, wherein said wild-type protein is MMAC1.

28. The method of claim 25, wherein said method utilizes a yeast-two hybrid system.

29. The method of claim 25, wherein said test compound is provided in a combinatorial library.

30. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 25.

31. A method of screening for drug candidates useful in treating a cancer resulting from a mutation in a protein, which protein when wild-type binds to wild-type MMSC1, wherein said method involves mixing a wild-type MMSC1 with a wild-type protein, to which wild-type MMSC1 binds, in both the presence of a drug and the absence of said drug and measuring the amount of binding of said mutant MMSC1 with said wild-type protein, wherein if the amount of said binding is greater in the presence of said drug than in the absence of said drug then said drug is a drug candidate for treating said cancer.

32. The method of claim 31, wherein said wild-type MMSC1 is a fusion protein and/or said wild-type protein is a fusion protein.

33. The method of claim 31, wherein said wild-type protein is MMAC1.

34. The method of claim 31, wherein said wild-type protein which binds to MMSC1 binds to one or more of the PDZ domains of MMSC1.

35. The method of claim 31, wherein said method utilizes a yeast-two hybrid system.

36. The method of claim 31, wherein said test compound is provided in a combinatorial library.

37. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 31.

38. A method of screening for drug candidates useful in treating treating a cancer resulting from a mutation in *MMSC1* which comprises the steps of:

(a) measuring the activity of a protein selected from the goup consisting of MMSC1 and a protein which binds to MMSC1 in the presence of a drug,

(b) measuring the activity of said protein in the absence of said drug, and

(c) comparing the activity measured in steps (1) and (2),

wherein if there is a difference in activity, then said drug is a drug candidate for treating said cancer resulting from a mutation in *MMSC1*.

39. The method of claim 38, whercin said protein is MMAC1.

40. The method of claim 38, wherein said test compound is provided in a combinatorial library.

41. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 38.

42. A method for identifying a compound that binds to MMSC1 in vitro comprising:

contacting a test compound with MMSC1 for a time sufficient to form a complex and

detecting for the formation of a complex by detecting MMSC1 or the compound in the complex,

so that if a complex is detected, a compound that binds to MMSC1 is identified.

43. The method of claim 42, wherein said test compound is provided in a combinatorial library.

44. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 42.

45. A method of screening for drug candidates useful in treating a cancer resulting from a mutation in *MMSC1*, wherein said method comprises treating an animal which is homozygous for *MMSC1* containing said mutation with a drug wherein if said animal does not develop cancer said drug is a drug candidate for treating said cancer.

46. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 45.

47. A method of screening for drug candidates useful in treating a cancer resulting from a mutation in *MMSC1*, wherein said method comprises treating an animal which has a tumor and which is homozygous for *MMSC1* containing said mutation with a drug, wherein if said tumor regresses said drug is a drug candidate for treating said cancer.

48. The method of claim 47 wherein said animal is transgenic for *MMSC1* with said mutation.

49. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 47.

50. A method of screening for drug candidates useful in treating a cancer resulting from a mutation in *MMSC1*, wherein said method comprises the steps of:

(a) growing a cell culture of cells which are homozygous for *MMSC1* containing said mutation in the presence of a drug,

(b) growing a cell culture of cells which contain a wild-type *MMSC1* gene, and

(c) growing a cell culture of cells which are homozygous for *MMSC1* containing said mutation in the absence of said drug,

wherein if the cells in step (a) behave more like the cells in step (b) than like the cells in step (c) then said drug is a drug candidate for treating said cancer.

51. A drug useful for treating a cancer resulting from a mutation in *MMSC1* identified by the method of claim 50.